



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

U/R

D5808-5

Job Sheet 207532



POSITIVE RECALL



Part No: D5808-5

Job Qty: 4 pcs

Part Name: Spine



Part Weight: 0 lbs

Status: New

Job Created: 2/27/20

Job Tracking No:

Due Date: 3/27/20

Created By: Jennifer Renwick

Type: Stock

Description:

Note: URF 20-522 DWG D5808 Rev A5 IPP Rev. A 2020.01.30 New issue DP Verify DD

Ship Via:

EFFECTIVE _____ **AUTH** _____

RELEASED _____ **DATE** _____

N/A

Priority: Medium

LIMITED RELEASE

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup Hrs	Run Hrs	Workcenter / Supplier	Lead Time	
110	Large Fab - Welded Assy-1	4 pcs	3/27/20		0.00	0.40	Large Fab - 1		
							Large Fab - 10		
							Large Fab - 2		
							Large Fab - 3		
							Large Fab - 4		
							Large Fab - 5		
							Large Fab - 6		
							Large Fab - 7		
							Large Fab - 8		
							Large Fab - 9		
							Large Fab - 11 (Various)		MJC
							Large Fab - 12		
120	QC 5	4 pcs	3/27/20		0.00	0.00	QC 5 - 10		
							QC 5 - 12		
							QC 5 - 17		
							QC 5 - 18		
							QC 5 - 19		
							QC 5 - 22		
							QC 5 - 24		
							QC 5 - 3		
							QC 5 - 43		
							QC 5 - 49		
							QC 5 - 51		
							QC 5 - 58		
							QC 5 - 68		
							QC 5 - 9		
							QC 5 - 50		
							QC 5 - 30		
							QC 5 - 40		
							QC 5 - 61		
							QC 5 - 81		



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S261243



Part: D5808-5

Job No: 207532

Serial No/Batch: S261243

Revision: A5

Inspector:

Exp Date:

Instructions:

Date: 03/05/20

DAS

MAR 10 2020

40
9-89

Plex 3/5/20 7:16 AM Dart.lajeunesse.marie

130	Packaging 3-1 - Stock - B4B	4 pcs	3/27/20	0.00	0.00	Packaging 3 - 1 - B4B	
						Packaging 3 - 2 - B4B	
						Packaging 3 - 3 - B4B	
						Packaging 3 - 4 - B4B	
						Packaging 3 - 5 - B4B	
						Packaging 3 - 6 - B4B	
						Packaging 3 - 7 - B4B	
						Packaging 3 - 8 - B4B	
						Packaging 3 - 9 - B4B	
						Packaging 3 - 10 - B4B	
						Packaging 3 - 11 - B4B	ML
						Packaging 3 - 12 - B4B	
						Packaging 3 - 13 - B4B	
						Packaging 3 - 14 - B4B	
						Packaging 3 - 15 - B4B	
						Packaging 3 - 16 - B4B	
						Packaging 3 - 17 - B4B	
						Packaging 3 - 18 - B4B	
						Packaging 3 - 19 - B4B	
						Packaging 3 - 20 - B4B	
						Packaging 3 - 21 - B4B	
						Packaging 3 - 22 - B4B	
						Packaging 3 - 23 - B4B	
						Packaging 3 - 24 - B4B	
						Packaging 3 - 25 - B4B	
						Packaging 3 - 26 - B4B	
						Packaging 3 - 27 - B4B	
						Packaging 3 - 28 - B4B	
						Packaging 3 - 29 - B4B	
						Packaging 3 - 30 - B4B	
						Packaging 3 - 31 - B4B	
						Packaging 3 - 32 - B4B	
						Packaging 3 - 33 - B4B	
						Packaging 3 - 34 - B4B	
						Packaging 3 - 35 - B4B	
						Packaging 3 - 36 - B4B	
						Packaging 3 - 37 - B4B	
140	QC 21 - SA	4 pcs	3/27/20	0.00	0.00	QC 21 - SA - 21	DAS
						QC 21 - SA - 70	21
						QC 21 - SA - 53	9-85

MAR 10 2020

Part Op 110 - Fabricate per Drwg - 1-Cut as per DWG. 2-Deburr.
 Descriptions: 120 - QC5- Inspect part completeness to step on W/O
 130 - Identify as per dwg & Stock Location: _____
 140 - QC21- Final Inspection - Work Order Release

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
M4130NTS0.750W.035 0.500	4130 Square Tube 0.750 X 0.035W	5.8400 ft (1.46 ea)	110-Large Fab - Welded Assy-1	5260 577

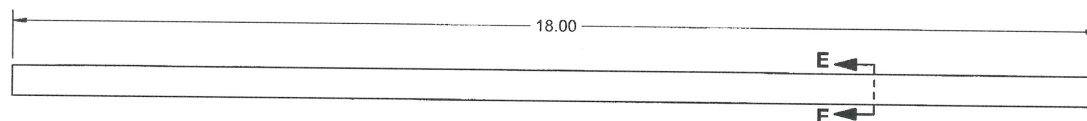
Job Allocations

Operation	Component Part	Required	Inventory	Allocated
110-Large Fab - Welded Assy-1	M4130NTS0.750W.035	6	448	0

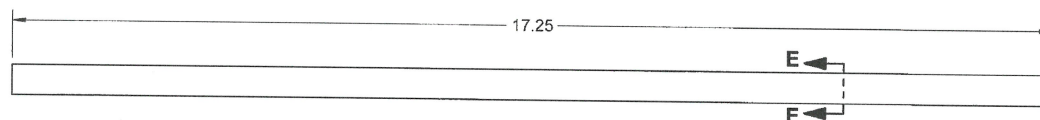
Part Specifications

Specifications could not be found.

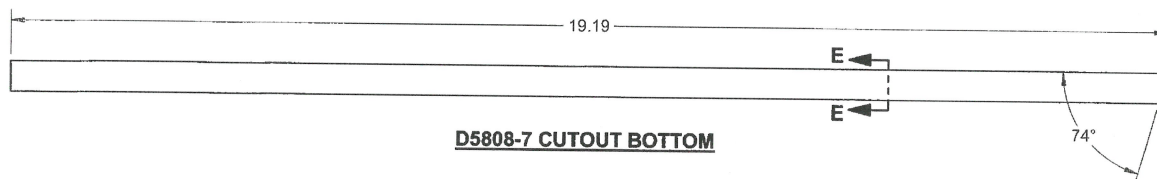
8 7 6 5 4 3 2 1



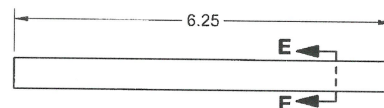
D5808-3 SPINE



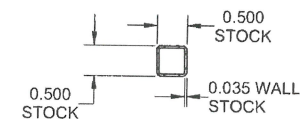
D5808-5 SPINE



D5808-7 CUTOUT BOTTOM



D5808-9 CUTOUT SIDE



SECTION E-E

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 207532MCS
2003-05

UNDER REVIEW

URF 2020-522 20.02.14 (NO)

NOTES:

- 1) MATERIAL: AISI 4130N STEEL SQUARE TUBING, 1/2 X 0.035 WALL
PER MIL-T-6736 OR AMS 6371/6360/6361/6362/6373/6374
REF DART SPEC M4130N-TS0.500W.035
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: -3: 0.32 lbs
-5: 0.30 lbs
-7: 0.34 lbs
-9: 0.11 lbs

RELEASED
2020 FEB 18 *NO*

APPROVED

DESIGN	ZF	DART AEROSPACE LTD	
DRAWN	ZF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	KPT	DRAWING NO.	REV. A
MFG. APPR.	DD	D5808	SHEET 5 OF 6
APPROVED	NO	TITLE	SCALE
DE APPR.	CP	LONG BASKET BODY	NTS
DATE	20.01.20	COPYRIGHT © 2020 BY DART AEROSPACE LTD <small>THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **POHB045883**



Supplier: FAC001-VU
Factory Steel
14020 Oakland Ave.
Detroit, MI 48203 USA
Phone: 313 883 6300
Fax: 313 883 4883

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

PO No: POHB045883

PO Date: 2/18/20

Due Date: 2/28/20

Purchase Order

Revision:

Revision Date:

Issued By: Lavoie, Chantal
Phone: 613-623-5200 Ext: 242
Fax: 613-632-1053
clavoie@dartaero.com

Via: Ground

Pymt Terms: Net 30

Freight Terms:

Special Comments:

RECEIVED
FEB 19 2020

611A
663

DAE
MAR 04 2020

Items													
Line Item	Job	Part	Drawing	Supplier Part No	Description	Status	Account	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (USD)	Extended Price
1		M4130NTS0.500W.035			4130 Square Tube .500 X .500 X .035W : MATERIAL: AISI 4130N STEEL TUBING AS PER MIL-T-6736 OR AMS 6371/6360/6361/6362 6373/6374 receive ft	Firmed	-	2/28/20	600 ft	0 ft 611A 603	600 ft	\$6.49/ft DAS E 9- MAR 04 2020	\$3,894.00
Grand Total:												\$3,894.00	

Order Notes

Procurement Quality Clauses

A005 right of entry

A012 chemical and physical test report

A016 personnel qualification

A017 raw material identification (as applicable). No Raw Metals from China or Soviet Bloc Countries. (DFARS)

A026 certification of material conformance

A041 quality management system

A042 dart notification by supplier

A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program.

A049 supplier awareness.

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

Plex 2/19/20 2:52 PM Dart.Lavoie.Chantal

MATERIAL RECEIPT INSPECTION FORM

MATERIAL: M4130NTSO.500W.035 PO / BATCH NO.: PO4130Y5883
 DATE: MAR 04 2020 5260577

MATERIAL CERT REC'D: YES
 QUANTITY RECEIVED: 611 FT
 QUANTITY INSPECTED: 611 FT
 QUANTITY REJECTED: 0

THICKNESS ORDERED: .500X.500 W.035
 THICKNESS RECEIVED: .500X.500 W.035
 SHEET SIZE ORDERED: —
 SHEET SIZE RECEIVED: —

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="checkbox"/>	
CORRECT FINISH	<input checked="" type="checkbox"/> N	
CORROSION	Y <input checked="" type="checkbox"/>	
CORRECT GRAIN DIRECTION	<input checked="" type="checkbox"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="checkbox"/> N	MIL-T-6736
CORRECT THICKNESS	<input checked="" type="checkbox"/> N	
PHOTO REQUIRED	Y <input checked="" type="checkbox"/>	
CORRECT REF # TO LINK CERT	<input checked="" type="checkbox"/> N	HIT 25537
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="checkbox"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="checkbox"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="checkbox"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="checkbox"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
	HRC	HRB	DUR A	DUR D	WEBSTER
TYPE OF MATERIAL					
SIZE OF TEST SAMPLE					
HARDNESS / DUROMETER READING					

testers located in the Quality Office

QC 18 INSPECTION	ENGINEERING SIGNOFF (if required)
INSPECTED BY: <u>MAR 04 2020</u> <u>DAS</u> DATE: <u>82</u> <div style="text-align: right; font-size: small;">9-89</div>	SIGNED OFF BY: _____ DATE: _____

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

LIME1

M4130NTS0.500W.035

POH13045883

DART

DESIGN DH	DRAWN BY DH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. M4130N-TS	REV. A SHEET 1 OF 1
DATE 05.02.09		TITLE 4130N SQUARE TUBING	SCALE NTS
A	05.02.09	NEW ISSUE	

PURCHASE MATERIAL:

AISI4130N STEEL SQUARE TUBING PER ONE OF
THE FOLLOWING SPEC'S: MIL-T-6736, AMS 6371,
6360, 6361, 6362, 6373 OR 6374

PART NUMBER:

M4130N-TS | A.AAA | W | .TTT |

DAS
82
3-89

WHERE A.AAA = WIDTH IN INCHES
TTT = WALL THICKNESS IN INCHES

EXAMPLE: 0.50" X 0.035" WALL = M4130N-TS0.500W.035

RELEASED
05.03.08 [Signature]

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PLYMOUTH TUBE CO.

1209 East 12th Street, Streator, Illinois 61364
Phone: (815) 673-1616 Fax: (815) 672-7343

TRUST YOUR SOURCE! ACCEPT NO SUBSTITUTIONS!



PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

179687 - 1 / 0

SHIP TO

Factory Steel & Metal Supply C
14020 Oakland Avenue
Detroit, MI 48203
USA

WORK ORDER 023914

HEAT NUMBER 25537

MELT SOURCE Timken Steel - Melt/Mfg. USA

PCS/HEAT

0

DAS
82
9-89

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE								
3999	SQ-N12035			/									
PART DESCRIPTION SHSQ0500035J200 ***** Square OD ***** Side1: 0.5000 Max:0.5100 Min:0.4900 Side2: 0.5000 Max:0.5100 Min:0.4900 Wall: 0.0350 Max:0.0380 Min:0.0320 Length: 10.00/26.00 Spec: (Mil-T 6736B Seamless Aircraft Grade: 4130 Anneal: Cond N													
CERTIFICATION REQUIREMENTS FAR BAA (FAR 52.225-1 Buy America Act Supplies), DFARS 252.225-7001 By America Act & Bal. of Payments Program FAR TAA (FAR 52.225-5 Trade Agreements) (Paragraph 1.3.4.5) This material was Eddy Current tested and conforms to the requirements of ASTM A-450. The Grain size is determined and reported by the raw material supplier in accordance to ASTM E-112. This raw material was magnetic particle inspected by the raw material supplier in accordance to AMS 2640J and/or ASTM E-1444, and rated as Frequency, and Severity to AMS 2301, latest revision. Yield is determined by using the 0.2% offset method. Additional Specifications - AMS-T 6736B, 6360P & 6371L. Material produced in accordance to ASTM A-519-17. Jominy results: J(5/16")=38 J(8/16")=31.													
Chemical Analysis													
C	Mn	P	S	Si	Al	Cr	Mo	Ni	Pb	Cu	V	Ti	Sn
.30	.56	.008	.005	.29	.025	1.02	.20	.13	.000	.18	.009	.003	.009
Physical Properties													
Freq.	Severity	Grain Size											
.000	.000	7											
Mechanical Properties													
TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV							
Tensile	Psi	6	121110	115340	118173	2536							
Yield	Psi	6	115370	109700	112525	2436							
Elongation	%	6	17	17	17	0							
Rockwell C	Rc	6	22	22	22	0							
TEST	RESULT												
Decarb/OD	Pass												
Total ID/OD decarb	Pass												

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Streator in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

Janine Derosselt

Quality Assurance



PLYMOUTH TUBE CO.

1209 East 12th Street, Streator, Illinois 61364
Phone: (815) 673-1815 Fax: (815) 672-7343

TRUST YOUR SOURCE ACCEPT NO SUBSTITUTIONS!



PRODUCT CERTIFICATION

SALES ORDER - LINE / RLS

179687- 1 / 0

SHIP TO

Factory Steel & Metal Supply C
14020 Oakland Avenue
Detroit, MI 48203
USA

WORK ORDER 023914

HEAT NUMBER 25537

PCS/HEAT 0

MELT SOURCE Timken Steel - Melt/Mfg. USA

CUSTOMER P.O.	CUSTOMER PART	QUANTITY	LADING NO	CERT ID / REV	CERT DATE
3999	SQ-N12035			/	

PART DESCRIPTION
SHSQ0500035J200

Additional Specification(s)

TEST	UNITS	#TESTS	HIGH	LOW	AVERAGE	STD-DEV
Brinell	Brinell	6	251	197	225	27

This test report data is for the heat Chemistry Stated above.

The material in this test report is:

- 1) Drawn in the USA
- 2) Free from Polybrominated Biphenyls (PBB), Polybrominated Diphenyl Ethers (PBDE), and Mercury contamination.
- 3) NAFTA compliant.

DAS
82
9-89

End of Certification

I certify that the results are a true and correct copy of the records prepared and maintained by Plymouth Tube Company, Streator in compliance with the requirements of the cited specification. Chemistry is as reported by the Steel supplier. This test report cannot be reproduced or distributed except in full without the written permission of Plymouth Tube.

Janie Berosselt
Quality Assurance

Entered: _____ Date: _____



WORK ORDER NON-CONFORMANCE / ROUTE UPDATE

NCR No. _____

Route update only ☐

Job: _____ Part No. _____		DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>		DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Cross tube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> </div> <div> Eng. (Non-AW) <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Water Jet <input type="checkbox"/> Supplier <input type="checkbox"/> Quality <input type="checkbox"/> </div> </div>					
Date :		Sequence #:		QTY Affected :			MRB (QSI042)		
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor	
								QC / QA Coordinator	
Root Cause Operator <input type="checkbox"/> Manufacturing Process <input type="checkbox"/> Equip/Tooling <input type="checkbox"/> Handling/Presservation <input type="checkbox"/> Material <input type="checkbox"/> Product Improvement <input type="checkbox"/> Process Improvement <input type="checkbox"/> Human Factors <input type="checkbox"/>		FAULT CATEGORY <div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Bending <input type="checkbox"/> Crushing <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave/Twist <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Mislabeled </div> <div style="width: 33%;"> <input type="checkbox"/> Contamination <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Incomplete/Unclear Instructions <input type="checkbox"/> Drill Holes <input type="checkbox"/> Fit/Function </div> <div style="width: 33%;"> <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain Direction <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Off-set/Set-up </div> <div style="width: 33%;"> <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Outside Tolerance <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Misread </div> </div>							
Other/Details:									